

AMENDMENTS

In the Claims:

This listing of claims replaces all prior versions, and listings, of claims in the application.

1. (currently amended): An optical device for lithography comprising a refractive lens system positioned, with respect to the optical path, behind a mask, the mask being provided with a mask structure, wherein beams emitted by an optical source are deflected by the mask structure on passing through the mask;

wherein in an area between the mask and the refractive lens system a medium is provided which has a refractive index (n) greater than 1; and wherein the refractive index (n) of the medium and the aperture of the refractive lens system are chosen so that beams representing deflection intensity maxima of first order, second order, and third order are collected by the refractive lens system.

2. (original): The optical device according to claim 1, wherein the refractive index (n) of the medium is greater than 1.1.

3. (original): The optical device according to claim 1, wherein the refractive index (n) of the medium is greater than 1.2.

4. (original): The optical device according to claim 1, wherein the medium is a liquid.

5. (original): The optical device according to claim 4, wherein the liquid comprises water.

6. (original): The optical device according to claim 4, wherein the liquid comprises perfluoropolyether.

7. (original): The optical device according to claim 1, wherein the medium is a gas.

8. (original): The optical device according to claim 1, wherein the lens system comprises one or a plurality of individual lenses.

9. (original): The optical device according to claim 1, wherein the device is used for the exposure of a wafer positioned, with respect to the optical path, behind the lens system.

10. (original): The optical device according to claim 9, wherein, in an area between the lens system and the wafer a medium is provided which has a refractive index (n) of approximately 1.

11. (original): The optical device according to claim 10, wherein air is used as the medium provided in the area between the lens system and the wafer.

12. (original): The optical device according to claim 9, wherein, in an area between the lens system and the wafer a medium is provided which has a refractive index (n) greater than 1.

13. (original): The optical device according to claim 12, wherein the refractive index (n) of the medium provided in the area between the lens system and the wafer (12, 102) is greater than 1.1.

14. (original): The optical device according to claim 13, wherein the refractive index (n) of the medium provided in the area between the lens system and the wafer is greater than 1.2.

15. (original): The optical device according to claim 12, wherein the medium provided in the area between the lens system and the wafer is a liquid.

16. (original): The optical device according to claim 15, wherein the liquid provided in the area between the lens system and the wafer comprises perfluoropolyether or water.

17. (original): The optical device according to claim 12, wherein the medium provided in the area between the lens system and the wafer is a gas.

18. (original): The optical device according to claim 1, wherein the mask is a photomask.

19. (original): The optical device according to claim 1, wherein the mask is a phase shift mask.

20. (currently amended): An optical lithography method, comprising:
providing a refractive lens system;
providing a mask; and
providing a medium which has a refractive index (n) greater than 1, in an area between the mask and the lens system, wherein the refractive index (n) of the medium and the aperture of the

refractive lens system are chosen so that beams representing deflection intensity maxima of first order, second order, and third order are collected by the refractive lens system.